

SPL Meeting  
Detector System Status  
April 7<sup>th</sup>, 2003

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**Summary**

Most presenters managed with only 2 or 3 viewgraphs. All systems have made great steps forward since December. In addition, I have observed that the detector data-taking efficiency is well up into the 90% level which is another indicator that we have overcome many of the chronic problems from last year. My own perspective is that we are now on the 2<sup>nd</sup> tier problem list (i.e. the problems are getting less frequent but generally harder to solve). In this list that follows, I am identifying only areas where I feel we need to be paying attention in the next weeks to months.

**Muon**

CMU has picked up one more unknown problem

Have to finish (start) work on the west CMX miniskirt so that it can go back in the summer.

The CCU work done in February was not as successful as was hoped for. I think that the impact and plan for any additional modifications is being worked on.

There is a need to improve trigger monitoring.

They are still working on fallout from the IFIX changes in February.

**DAQ:**

There are several irritating chronic problems but these should not cause significant downtime unless the DAQ ace gets confused. Training and experience (overlap) are the two ways to bypass these problems while the experts look for fixes (which of course would be much better).

**Level 3 Software:**

The coldstart time is now exceeding 3minutes (again) – it's being worked on. The executable start is also taking a long time due to the large number of cloned filter modules.

The event record size is a major issue for bandwidth. There are two very high priority tasks: dropping the reconstructed banks according to stream while retaining a L3 summary object and compressing the raw tracking data. We might gain 30-50% in

bandwidth and these improvements are certainly necessary before we can take advantage of 4/5 maps in the SVT.

### **Consumers**

The calibration consumers are running different versions of the CDF software from the online monitors. The impact is that there is a lot of disk space used to keep these old releases around. Eventually it might not be possible so the calibration consumers should start now to upgrade to the latest production release.

### **L1 & L2**

Greg was pretty brief and from my own knowledge glossed over a couple of key points. My list of action items are:

- 1) understand the deadtime vs trigger rate plot that was shown – this is a very high priority item
- 2) figure out what is going on with the DTOs
- 3) Finish the L2 muon board. Get it tested and equipped with software in the alpha to use it. In my opinion it is essential that this board be commissioned before the summer shutdown.
- 4) I didn't hear anything about the 3 track board. I thought that this was also a high priority development.

### **Silicon Detectors**

Buffing the FTMs (whatever that means!) looks to be a high priority task if the right opportunity presents itself (hopefully done incrementally between now and the summer shutdown).

Moving to a 2 SRC readout system is likely to be the key to getting us to realize our maximum L1A rate (though we don't know where the brick wall lies). In the present readout scheme we are certainly limited to L1A below about 24kHz.

Gino wants to put more resources behind L00 and ISL without taking anything away from SVXII. I agree with the sentiment but wonder where the people will come from.

### **Calorimeter and Shower Maximum Detectors**

Getting the energy scales understood is a high priority task

Monitoring the changes in detector response with time is a high priority ongoing task (and one that will go on as long as we operate the CDF detector)

We need a plug laser calibration consumer.

### **TOF**

We thought we had fixed channel 350 – we hadn't and the next possible fix is more invasive.

Resolution is poorer since the February shutdown and probably reflects a need to work on the calibrations

### **COT**

Getting an optimal arrangement of COT thresholds and XFT patterns (1 miss vs 2 miss) as a function of superlayer is about the only high priority task that can be worked on before the summer shutdown.

### **CLC**

They will be ready to replace 16 or so more tubes in a couple of weeks. Thus we can recover from the mistake made in filling the counter with uncertified gas.

Monitoring the gain change requires a minimum bias run at the start of each store. There is a significant loss of physics data and in my opinion a high priority task is to determine when we can cease to do this.

### **Forward Detectors**

They are still having problems with the readout of the fiber detector. This needs to be addressed with some urgency.

### **IFIX**

The upgrade is still not complete due to problems on the pc running the plug HV.

Maintaining old PCs (many of which need an ISA interface) with an old and unsupported operating system is a major headache and a plan to resolve this needs to be in place by around the summer.

### **Looking towards the Summer Shutdown**

Some points associated with work being planned for the summer shutdown came up in the. I am adding my own issues to this list.

The move to RedHat 7.1

Work on the COT

Maintenance on the Silicon System

Replacement of CLC tubes

Source scans in the calorimeters

Put the Miniskirts back in

Now is the time to start thinking about the work that will be needed.